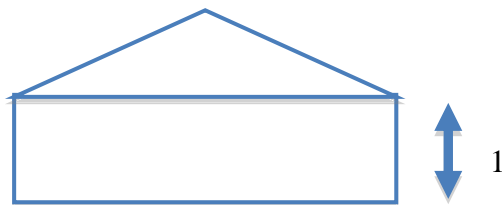

Part A

1. When 12345678 is divided by 9, the remainder is?
- (A) 0 (B) 1 (C) 3 (D) 5 (E) 7
-
2. A cinema complex has 800 seats divided into 3 theatres. There are 270 seats in Theatre 1, and there are 150 more seats in Theatre 2 than in Theatre 3. How many seats are in Theatre 2?
- (A) 190 (B) 280 (C) 340 (D) 380 (E) None of these
-
3. Martin ate 100 cookies in five days. Each day he ate 6 more than the day before. How many cookies did he eat on the first day?
- (A) 6 (B) 8 (C) 10 (D) 12 (E) 14
-
4. A barn has stalls for 1000 animals. Forty percent of the stalls are for ponies. On Tuesday, there were 200 ponies and a bunch of horses at the barn. The barn was 75 percent full. How many horses were in the stalls?
- (A) 400 (B) 450 (C) 500 (D) 550 (E) 600
-
5. Bernard has twice as many marbles as Bob. Donald has as many marbles as Bernard and Bob have together. Roman has 10 marbles more than Donald. Together they have 109 marbles. How many marbles has Bernard?
- (A) 11 (B) 22 (C) 33 (D) 43 (E) 44
-
6. The figure below is made up of two parts: a rectangle with short sides of length 1 and an isosceles triangle. The base of the triangle forms one of the long sides of the rectangle. The area of the triangle is half the area of the rectangle. What is the vertical height of the triangle?



- (A) $\frac{1}{2}$ (B) 1 (C) $\frac{3}{2}$ (D) 2 (E) Not enough information
-

7. Last summer Sam worked for a cycle dealer. The dealer agreed to pay him \$210 and a new bike for seven weeks of work. But Sam didn't enjoy the job and quit after four weeks. The dealer gave him \$21 and the bike. How much was the bike worth?

- (A) \$216 (B) \$225 (C) \$231 (D) \$253 (E) None of these
-

8. The international space station makes approximately 5760 orbits of the earth a year. Which answer below is closest to the time of one orbit?

- (A) 0.5 hour (B) 1.5 hours (C) 3 hours (D) 9 hours (E) 1 day
-

9. The first three numbers in a sequence are $1, \frac{2}{3}, \frac{4}{9}$. What number do you get by adding together the first 5 numbers in the sequence?

- (A) $\frac{91}{243}$ (B) $\frac{212}{243}$ (C) $\frac{91}{81}$ (D) $\frac{130}{81}$ (E) $\frac{211}{81}$
-

10. The numerator of a certain fraction is 3 less than the denominator. If the numerator is tripled and the denominator is increased by 7, the resulting fraction is equal to $\frac{3}{2}$. What was the original fraction?

- (A) $\frac{5}{8}$ (B) $\frac{7}{10}$ (C) $\frac{8}{11}$ (D) $\frac{10}{13}$ (E) None of these
-

Part B

11. $\left(1 + \frac{1}{2}\right) \times \left(1 + \frac{1}{3}\right) \times \left(1 + \frac{1}{4}\right) \times \dots \times \left(1 + \frac{1}{2009}\right)$ is equal to

- (A) $\frac{2009}{2}$ (B) 1005 (C) 2009 (D) 2010 (E) None of these
-

12. In 2 years I will be 5 times as old as my son and half as old as my father. My father just turned 78. How old is my son?

- (A) 5 (B) 6 (C) 7 (D) 8 (E) 9
-

13. It takes one man one day to dig a 2m x 2m x 2m hole. How many days will it take 3 men working at the same rate to dig a 4m x 4m x 4m hole?

- (A) $\frac{3}{8}$ (B) $\frac{2}{3}$ (C) $\frac{4}{3}$ (D) $\frac{3}{2}$ (E) $\frac{8}{3}$
-

14. A motorcycle and a truck left a roadside diner at the same time. After traveling in the same direction for one and a quarter hour, the motorcycle had traveled 25 km farther than the truck. If the average speed of the motorcycle was 60 km/h, what was the average speed of the truck?

- (A) 25 km/h (B) 38 km/h (C) 40 km/h (D) 42 km/h (E) 50 km/h
-

15. How many three digits numbers have 3 distinct digits whose product is odd?

- (A) 60 (B) 70 (C) 80 (D) 125 (E) None of these
-

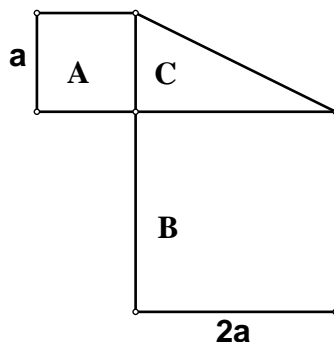
16. Each row and each column of the following grid contains the numbers 1, 2, 3 and 4 exactly once each. The top row of the grid is

1			
			3
	2		1
		4	

- (A) 1, 3, 2, 4 (B) 1, 2, 4, 3 (C) 1, 2, 3, 4 (D) 1, 4, 3, 2 (E) 1, 3, 4, 2
-

-
17. Two numbers are given. The sum of their squares minus twice their product is equal to 16. What is the difference between the largest and the smallest of these numbers?
- (A) 4 (B) 6 (C) 8 (D) 10 (E) 16
-

18. Let A, B and C be the areas of the two squares and of the right triangle. The lengths of the sides of the small and large squares are a and $2a$ respectively. Then $\frac{B+C}{A}$ is equal to



- (A) 4 (B) 5 (C) 6 (D) 8 (E) Not enough information
-
19. A horse walks at 75 meters per minute. A fly flies at 150 meters per minute. A fly sitting on the horse's nose flies forward for 1 minute then turns around and flies back to the horse's nose. How far did the horse walk from the time the fly left the horse's nose to the time the fly returned to the horse's nose?
- (A) 75 m (B) 100 m (C) 125 m (D) 150 m (E) 175 m
-
20. Four houses in a row on a street are going to be painted. Each is to be painted one color. The available colors are grey, brown, white, yellow, and red. In how many different ways can the houses be painted if each house must be a different color than the colors of its immediate neighbors?
- (A) 120 (B) 180 (C) 256 (D) 320 (E) 625
-

Part C

21. If you write all integers from 1 to 100, how many even digits will be written? (When you write the number 42, two even digits are written.)

- (A) 50 (B) 71 (C) 80 (D) 89 (E) 91
-

22. In a farm there are hens (no bump, 2 legs), camels (two bumps, four legs) and dromedaries (one bump, four legs). If the number of legs is 4 times the number of bumps, then the number of hens divided by the number of camels will be?

- (A) $\frac{1}{2}$ (B) 1 (C) $\frac{3}{2}$ (D) 2 (E) Not enough information
-

23. A cubic box of side 1m is placed on the floor. A second cubic box of side $\frac{2}{3}$ m is placed on top of the first box so that the centre of the second box is directly above the centre of the first box. A painter paints all of the surface area of the two boxes that can be reached without moving the boxes. What is the total area of surface that is painted?

- (A) $\frac{49}{9}$ m² (B) $\frac{57}{9}$ m² (C) $\frac{61}{9}$ m² (D) $\frac{72}{9}$ m² (E) None of these
-

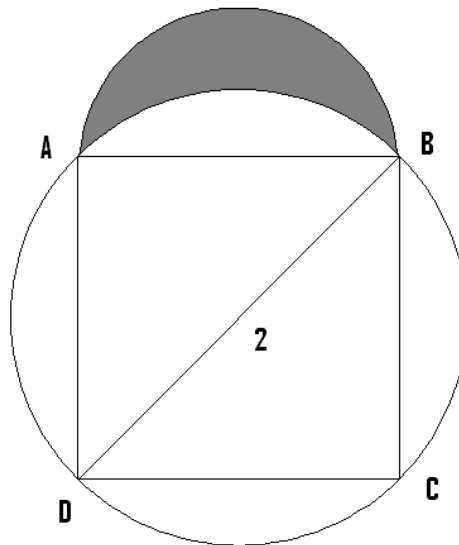
24. What is the last digit of 2^{2009} ?

- (A) 0 (B) 2 (C) 4 (D) 6 (E) 8
-

25. The numbers 1, 2, 3, 4, 5 and 6 are to be arranged in a row. In how many ways this can be done if 2 is always to the left of 4 and 4 is always to the left of 6? (For example 2,5,3,4,6,1 is an arrangement with 2 to the left of 4 and 4 to the left of 6)

- (A) 20 (B) 36 (C) 60 (D) 120 (E) 240
-

26. ABCD is a square embedded in a circle of diameter BD of length 2. AB is the diameter of the half-circle on top of the square. What is the area of the shaded region?



- (A) $\frac{4-\pi}{4}$ (B) $\frac{\pi-2}{4}$ (C) $\frac{1}{2}$ (D) 1 (E) Not enough information